

## AMENDMENT

Kindly amend the application, without prejudice, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents, to read as follows:

## In the Claims

1. (Currently amended) (Currently amended) A device for forming and/or increasing the relative number of undifferentiated cells in a cell population comprising haematopoietic cells, including committed cells, which device comprises;

- (i) a chamber;
- (ii) an input storage container containing a cell population including committed cells;
- (iii) means for introducing into said the chamber cells of the from an input storage  
container a cell population including committed cells;

(iv) transfer means communicating between the input storage container and the chamber for transferring the cells from the storage container continuing to the chamber;

(v) means for introducing into an agent into the chamber ~~said chamber~~ ~~an agent~~ selected from the group consisting of: \_\_\_\_\_

- \_\_\_\_\_ (a) an antibody that binds to MHC antigens,  
 \_\_\_\_\_ (b) erythropoietin, and  
 \_\_\_\_\_ (c) GM-CSF;

(vi) a further transfer means for transferring a volume of the agent into the chamber,  
including a reservoir of the agent;

(vii) incubation means for incubating said committed cells in the presence of ~~said the~~ agent;

**(viii) mixing means for mixing the agent and the cell population in the chamber;**

(ix) an output storage container; and

(x) means for removing from the chamber into ~~an~~the output storage container a sample of cells comprising undifferentiated cells;

wherein the chamber, the input storage container, and the output storage container are disposable.

2. (Currently amended) A device for forming and/or increasing the relative number of undifferentiated cells in a cell population comprising haematopoietic cells, including committed cells, which device comprises:

- (i) a chamber;
- (ii) an input storage container containing a cell population including committed cells;
- (iii) a means for introducing into the said chamber from an input storage container cells of the cell population including committed cells;
- (iv) transfer means communicating between the input storage container and the chamber for transferring the cells from the storage container continuing to the chamber; a transfer means for transferring an amount of said cell population from a storage container to said chamber;
- (v) a means for introducing into said chamber an agent selected from the group consisting of (a) an antibody that binds to MHC antigens, (b) erythropoietin, and (c) GM-CSF;
- (vi) a further transfer means for transferring a volume of the agent to the chamber, wherein the further transfer means comprises a volume of the agent;
- (vii) a incubation means for incubating said agent and said committed cells;
- (viii) a mixing means for mixing the agent and the cell population in the chamber;
- (ix) an output storage container; and
- (x) a means for removing from the chamber into an the output storage container a sample of cells comprising undifferentiated cells;

wherein the chamber, the input storage container, the further transfer means, and the output storage container are disposable.

3. (Currently amended) A device according to claim 1 wherein said device comprises:

- measuring means for measuring the volume of said cell population; and/or
- means for conducting cell counts and for measuring the cell concentration of said cell population; and/or
- ~~transfer means for transferring an amount of said cell population from a storage container to said chamber; and/or~~
- calculator means for calculating the volume of agent to be added to the chamber; and/or
- carbon dioxide control means for controlling the concentration of carbon dioxide in said chamber; and/or

temperature control means for controlling the temperature in said chamber; and/or  
timing means for timing the incubation period; and/or  
display means for displaying to the user the remaining time period of the incubation period; and/or

alarm means for alerting the user of completion of the incubation period; and/or

harvesting means for harvesting cells from the chamber by dislodging cells that are attached to the surface of the chamber; and/or

removal means for removing a sample of cells, comprising undifferentiated cells, from the chamber into a storage container; and/or

sealing means for sealing a storage container comprising a population of cells comprising undifferentiated cells; and/or

communicating means for the device to remotely communicate orders and/or confirm that operations are being or have been performed correctly,

wherein the transfer means is configurable to transfer a pre-determined amount of the cell population from the storage container to the chamber; and

wherein the means for introducing an agent into the chamber ~~is~~ comprises the further transfer means for transferring a volume of agent to the chamber, and/or a transfer means for transferring a calculated volume of agent to the chamber.

4. (Canceled)

5. (Original) A device according to claim 3 wherein the means for conducting cell counts is a coulter counter.

6. (Canceled)

7. (Original) A device according to claim 3 wherein the means for conducting cell counts is a cytometer.

8-10. (Canceled)

11. (Currently Amended) A device according to claim 3 wherein ~~said the further transfer means for transferring~~ is configurable to transfer a volume of agent to the chamber ~~is and comprises~~ a syringe driven by a motor.

12. (Canceled)

13. (Currently Amended) A device according to claim 3 wherein the further transfer means is configurable to transfer ~~wherein said transfer means for transferring~~ a calculated volume of agent to the chamber and comprises is a syringe driven by a motor.

14. (Canceled)

15. (Original) A device according to claim 3 wherein the harvesting means harvests the undifferentiated cells from the chamber.

16. (Canceled)

17. (Previously presented) A device according to claim 3 wherein the communicating means includes a microprocessor to collect and/or store data pertaining to agent(s) increasing the relative number of undifferentiated cells in a cell population, and/or ordering a supply thereof and/or operations and modem means for transmitting such data.

18. (Canceled)

19. (Previously presented) A device according to any one of claims 1-3 wherein the committed cells are non-cancer cells.

20. (Previously presented) A device according to any one of claims 1-3 wherein the committed cells are differentiated cells.

21. (Canceled)

22. (Previously presented) A device according to any one of claims 1-3 wherein the committed cells are selected from CFC-T cells, CFC-B cells, CFC-Eosin cells, CFC-Bas cells, CFC-GM cells, CFC-MEG cells, CFC-E cells, T cells and B cells.

23. (Previously presented) A device according to any one of claims 1-3 wherein the undifferentiated cells are pluripotent stem cells.

24. (Canceled)

25. (Previously presented) A device according to any one of claims 1-3 wherein the undifferentiated cells are characterised by one or more of the following cell surface marker designations: CD34+, HLA-DR-, CD38-, CD117, AC133, CD90 and/or CD45low.

26. (Previously presented) A device according to any one of claims 1-3 wherein the undifferentiated cells are MHC class I+ and/or MHC class II+ cells.

27. (Canceled)

28. (Previously presented) A device according to claim 2 wherein the antigen is an MHC class I antigen or an MHC class II antigen.

29. (Original) A device according to claim 28 wherein the class I antigen is an HLA-A receptor, an HLA-B receptor, an HLA-C receptor, an HLA-E receptor, an HLA-F receptor or an HLA-G receptor and said class II antigen is an HLA-DM receptor, an HLA-DP receptor, an HLA-DQ receptor or and HLA-DR receptor.

30. (Previously presented) A device according to claim 29 wherein the antigen is an HLA-DR receptor.

31. (Previously presented) A device according to claim 2 wherein the antigen comprises a  $\beta$ -chain having homologous regions.

32. (Previously presented) A device according to claim 31 wherein the antigen comprises at least the homologous regions of the  $\beta$ -chain of HLA-DR.

33. (Canceled)

34. (Previously presented) A device according to claim 2 wherein the antibody is a monoclonal antibody to the MHC antigen.

35. (Previously presented) A device according to claim 2 wherein the antibody is selected from the group consisting of monoclonal antibody CR3/43 and the monoclonal antibody TAL 1B5.

36. (Original) A device according to claim 34 wherein the antibody is selected from the group consisting of monoclonal antibody CR3/43 and the monoclonal antibody TAL 1B5.

37. (Previously presented) A device according to claim 2 wherein the agent modulates MHC gene expression.

38. (Original) A device according to claim 37 wherein the agent modulates MHC class I+ and/or MHC class II+ expression.

39. (Previously presented) A device according to any one of claims 1-3 wherein the cell population including committed cells is a buffy coat blood sample or is from a buffy coat blood sample.

40. (Currently amended) A device for forming and/or increasing the relative number of undifferentiated cells in a cell population comprising haematopoietic cells, which device comprises:

(i) a chamber;

(ii) an input storage container containing a cell population including committed cells;

(iii) ~~a~~ means for introducing into ~~said the~~ chamber ~~cells of the from an input storage container~~ a cell population including haematopoietic cells;

(iv) ~~a transfer means for transferring an amount of cell population from a storage container to chamber~~; transfer means communicating between the input storage container and the chamber for transferring the cells from the storage container continuing to the chamber;

(v) ~~a~~ means for introducing an agent into ~~thesaid~~ chamber, ~~an agent wherein the agent is~~ selected from the group consisting of: (a) an antibody that binds to MHC antigens, (b) erythropoietin, and (c) GM-CSF;

(vi) ~~a further transfer means for transferring a volume of the agent to the chamber, wherein the further transfer means comprises a volume of the agent;~~

(vii) ~~an~~ incubation means for incubating said committed cells in the presence of ~~said the~~ agent;

(viii) ~~a~~ mixing means for mixing the agent and the cell population in the chamber;

(ix) ~~an output storage container;~~ and

(x) ~~a~~ means for removing from the chamber into ~~the an~~ output storage container a sample of cells comprising undifferentiated cells;

wherein the chamber, the input storage container, the further transfer means, and the output storage container are disposable.

41. (Currently amended) A device for forming and/or increasing the relative number of cells having a cell surface marker designation CD34+ and/or HLA-DR- and/or CD38- and/or CD117 and/or AC133 and/or CD90 and/or CD45<sup>low</sup> in a cell population comprising haematopoietic cells, including committed cells, which device comprises:

(i) a chamber;

(ii) an input storage container containing a cell population including committed cells;

(iii) ~~a~~ means for introducing into ~~said the~~ chamber ~~from an input storage container~~ ~~a~~ cells of the cell population including committed cells;

(iv) ~~a transfer means for transferring an amount of said cell population from a storage container to said chamber~~; communicating between the input storage container and the chamber for transferring the cells from the storage container continuing to the chamber;

(v) ~~a~~ means for introducing an agent into ~~said the~~ chamber ~~an agent~~; [[and]]

(vi) a further transfer means for transferring a volume of the agent to the chamber, wherein the further transfer means comprises a volume of the agent;

(vii) an-incubation means operable to incubate said committed cells and said agent selected from the group consisting of an antibody that binds to MHC antigens, erythropoietin, and GM-CSF;

(viii) a-mixing means for mixing the agent and the cell population in the chamber;

(ix) an output storage container; and

(x) a-means for removing from the chamber into ~~an~~the output storage container a sample of cells comprising undifferentiated cells;

wherein the chamber, the input storage container, the further transfer means, and the output storage container are disposable.

42-100. (Cancelled)

101. (Currently Amended) A device for treating a starting hematopoietic cell population comprising haematopoietic cells with an agent selected from the group consisting of (a) an antibody that binds to MHC antigens, (b) erythropoietin, and (c) GM-CSF, and capable of increasing the relative number of undifferentiated cells, which device comprises:

(a) a support hook for attachment of an inlet storage container containing a starting cell population, wherein said inlet storage container is a blood bag;

(b) a heated incubation chamber;

(c) means for drawing the starting cell population from the inlet storage container into the heated incubation chamber;

(d) a refrigerated chamber for insertion of a syringe containing the agent selected from the group consisting of (a) an antibody that binds to MHC antigens, (b) erythropoietin, and (c) GM-CSF;

(e) means for delivering the agent from the refrigerated chamber into the heated incubation chamber;

(f) means for mixing the agent and the cell population in the heated incubation chamber;

(g) a carbon dioxide control means for introducing an amount of carbon dioxide into the -heated incubation chamber;

(h) a means for hanging an outlet storage container, wherein said outlet storage container is a blood bag; and

[[~~(h)~~]] (i) means for drawing the treated cell population from the heated incubation chamber into the outlet storage container.

102-103. (Canceled)

104. (Previously presented) A device according to claim 101 wherein the means for drawing the starting cell population from the inlet storage container into the heated incubation chamber comprises a peristaltic pump.

105. (Previously presented) A device according to claim 101 wherein the means for drawing the treated cell population from the incubation chamber into the outlet storage container comprises a peristaltic pump.

106. (Previously presented) A device according to claim 101 wherein the support hook forms part of an electronic balance for weighing the inlet storage container.

107. (Previously presented) The device according to claim 101 wherein the means for delivering the agent from the refrigerated chamber into the heated incubation chamber comprises a stepper motor for discharging a syringe.